

Pest Alert



Introduction to Chrysanthemum White Rust

Chrysanthemum White Rust, *Puccinia horiana* Henn., is a [destructive disease of chrysanthemums and related plants](#). This disease has the potential to be extremely damaging to the commercial horticulture and florist industries if it becomes established in the United States. The disease is indigenous to China and Japan, but has since spread to Europe, Australia, South America and Africa. Chrysanthemum white rust (CWR) has been accidentally introduced several times into the United States over the past several decades by chrysanthemum hobbyists, but aggressive eradication programs have successfully prevented establishment.

Hosts

Twelve species of chrysanthemum (*Dendranthema*) have been shown to be hosts for the rust. Major susceptible varieties include *C. morifolium* x *C. spp.* hybrids (Florists chrysanthemum and Garden or Hardy mums), Nippon daisy, High daisy and *C. pacificum*. Species that have not developed symptoms when inoculated include the Annual chrysanthemums, the Crown, Pyrethrum, Marguerite, Ox-eye and Shasta daisies, Dalmatian pyrethrum and the Corn marigold.

Symptoms

[Light green to yellow spots](#) (which may be dimpled) appear on the upper surface of infected leaves. Eventually the spots turn brown and become necrotic. Spore-forming pustules appear on the lower surface of the leaves and are buff to pink color. As these pustules mature, they become white in color. These symptoms most commonly occur on younger leaves and flower bracts, but can occur on other green tissue and on petals. Symptom development is limited or absent during hot and dry weather and may be suppressed by fungicide applications.

Disease Movement

The disease is moved from infected stock to healthy plants primarily by splashing water that contains spores. Free water on the leaves is necessary for spore development. Under optimal conditions, new infection can be established in as little as five hours. CWR spores can travel 1/4 mile under high humidity conditions or during a rain storm. CWR can also be spread to uninfected plants on contaminated soil, litter, dead leaves, gardening equipment, clothes, shoes and hands. Infectious spores can live for up to eight weeks on contaminated objects.

Control

The spread of the disease has been checked primarily by exclusion (quarantines). When CWR has entered the United States, survey, sanitation, modified cultural practices and fungicides have been employed to eradicate the disease. Since infectious spores can only live for up to eight weeks, the disease cycle can be broken by a host-free period of equal duration. Hot water treatments (5 min. at 115 F) may eradicate the disease. Management of the humidity and water can also limit disease spread. Additionally, the fungicide myclobutanil has recently been shown to be highly effective in reducing or eliminating infections of CWR.

For more information on this disease, or to report an infestation of Chrysanthemum White Rust, please Contact the Rhode Island Cooperative Agricultural Pest Survey Office at 401-949-1770, or Email: JACaps@Hotmail.com.

